

IntelligentPad Strategic Issues

Ted Nelson, Research Fellow, Sapporo HyperLab

OBJECTIVES OF THIS PAPER

How can IntelligentPad best become a powerful, effective and widespread tool in tomorrow's computer world?

We need to understand the opportunities, possibilities and pressures of the present situation.

IntelligentPad represents a wonderful vision, as outlined by Profesor Tanaka in various writings and his videotape. This is the dream of "meme media," a system of what he calls "media-based" software construction that can become a world-wide system of commerce, with pads whose parts can be sold, taken apart, and re-used in whole or part, *as sold in whole or part by 2/20, dead & just still at center!*

Everyone involved with IntelligentPad admires this dream and wants to help bring it about. However, concrete actions must be taken to bring IntelligentPad out into the world, and the details and suitability of these actions will determine its success.

This paper lists some enclosures with text & center.

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Basic Applications

Marketing

Distribution Channels; Market Preparation

THE CHOICES AHEAD

SUMMARY AND CONCLUSION

THE CURRENT SITUATION AND PROBLEMS OF INTELLIGENTPAD

IntelligentPad has unique powers and remarkable characteristics.

It also has several tactical disadvantages and difficulties, and it is in a difficult competitive position.

The Competitive Situation

Depends on what you think IntelligentPad IS

WHAT IS IT EXACTLY?

The competitive situation depends on what you think IntelligentPad actually IS.

The strategic situation depends on what you think IntelligentPad actually IS.

IP is unique; but it resembles some other product in some ways
~~IntelligentPad is superficially similar to certain products on the market~~

~~CONCEPT~~

WIDGET-BASED SYSTEMS AND CONSTRUCTION SETS

As a Construction Set — $\leq$ IP
INPUT ~~AND~~ OUTPUT
DATA AND WIDGETS
OUTPUT DISPLAYS
AND WIDGETS
PIPING METHOD

APR 25 1995

So far not very successful.

NextStep, and other visual construction systems, permit easy prototyping by the combination of screen pieces, or "widgets." This is what IntelligentPad may look like to a lot of people.

INTELLIGENT PAD AS A SIMPLE LANGUAGE * gives it upon
but not done yet

CONTEMPORARY EASY LANGUAGES :

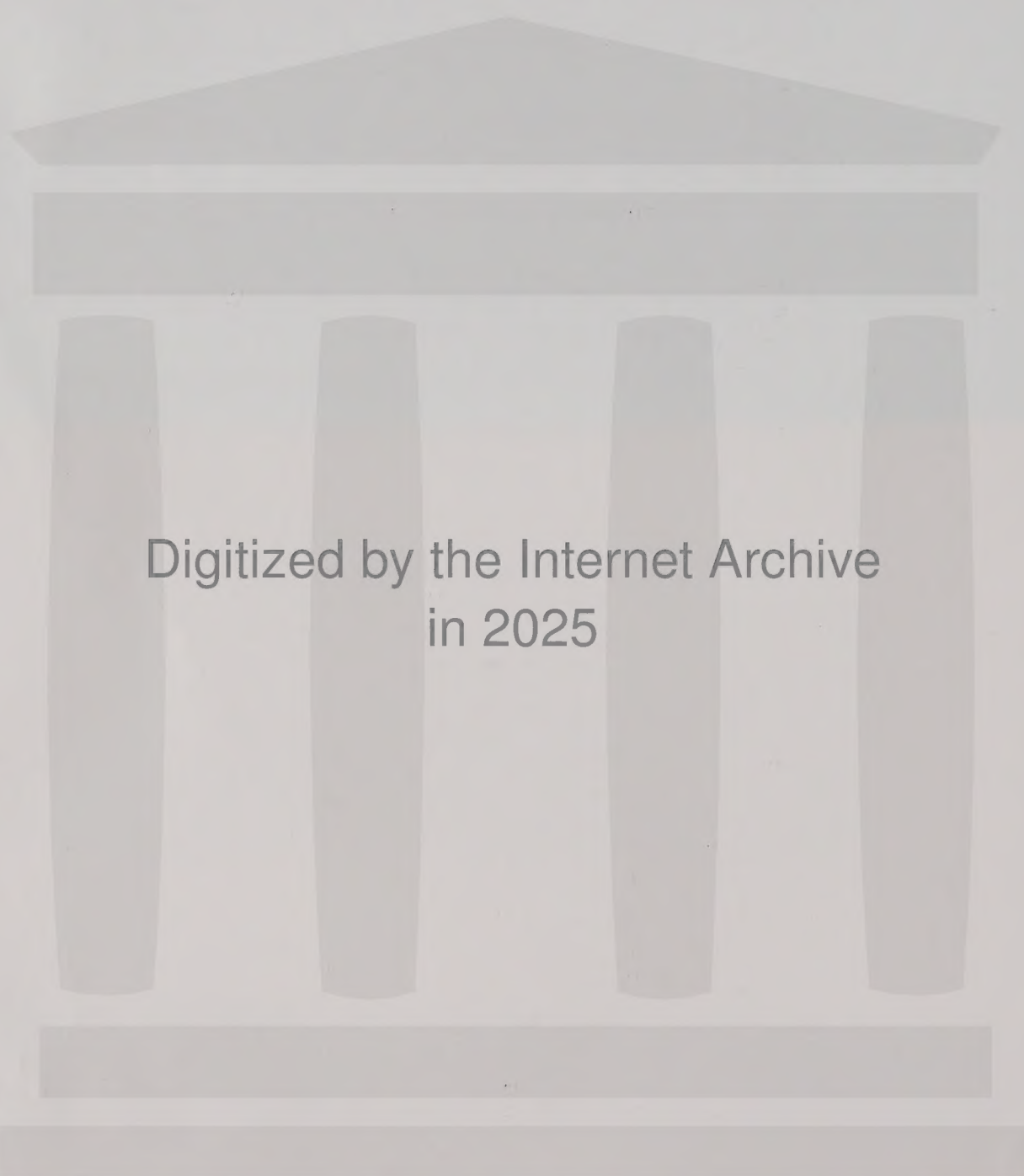
Visual Basic is the front-running easy language (note that it has nothing to do with the original "Basic" language). Other important easy computer languages are NextStep, HyperCard and SuperCard. Yet another system, which may become very important, is "GainMomentum" from Sybase.

INTELLIGENTPAD AS A BACKBONE FOR SIMPLE PERSONAL SYSTEMS

Gives that impression but not yet developed

INTELLIGENTPAD AS A FRAMEWORK FOR INDUSTRIAL SYSTEMS

Script-based or document-based factory flow models



Digitized by the Internet Archive
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<https://archive.org/details/intelligentpadst00tedn>

WEakest STRENGTH: NET

INTELLIGENTPAD AS A FRAMEWORK FOR DISTRIBUTED SYSTEMS

~~Freebie~~ network services ^{deal dots between distributed porting}
***This where it shines.
Large-scale.

★ ^{Pass. like best used} Freebie software frobs —

Software browser
highly unlikely to replace Mosaic or Netscape
Niche market ~~offer~~ OFFERING INTERNET ~~pages~~ ^{pages}

~~WWW~~ WWW URL database, ~~connect~~, ~~file~~ & thumbnails.

DIFFERENTIAL EQUATIONS

GREAT COMPETITION
into
delivered

your

Competition with IntelligentPad in the Software Market

The problems of the software market are becoming known and understood, at least the way the market works now. Many of us would like it to work differently, but that is a separate issue.

Fiercely capital and competitive.

Tens of thousands of software developers give out their works through Shareware because they have no other way

Competitive Languages

2) Confusion Sets - have been only

Competitive Database Products

Competitive Personal Applications

2. Competition with IntelligentPad on the Internet

Everything is still free on the Internet. That does not mean it isn't competitive: it's competitive in a very unusual way, competition to give things away.

785

2 IP

Current Position: LIKE UNIX IN 1970, LIKE THE MACINTOSH IN 1984

IntelligentPad is the kernel, the starting point, of a potential new

industry and system of software.

However, this has a number of historical precedents. I think it is most like Unix in 1970 and the Macintosh in 1984-- *this is the beauty* *the first part* *shh hony* but only the first part, of what could be an extensive movement.

The success of Unix was based on its acceptance by many thousands of university students and faculty. This happened over a considerable period of time, and happened because Unix was offered free to educational institutions.

The success of the Macintosh was much less certain, and there have been several critical periods where it could have died: right after launch, in 1984; 1987-1988; and about 1992. It was saved by precise tactical actions--

1984: the inclusion of two basic programs, MacPaint and MacWrite, in the original Macintosh package. These allowed beginners to do word processing and very unusual graphic art projects, and were a sign to users and developers of the machine's potential.

Furthermore, Apple's "Evangelist" and developer programs encouraged a number of firms to enter the Macintosh software market.

1987-8: the appearance of HyperCard and Adobe PhotoShop. These defined a new genre (hypermedia) and a new industry (graphic arts image processing and prepress), locking in two new niche markets.

1992: Apple decides to open the system to other manufacturers, assuring a survivable market.

This is my personal analysis, and may not be correct, but the main point is that specific steps were taken carefully to deal with the Macintosh's strategic and competitive situation.

In the same way, we must consider appropriate steps to advance the strategic and competitive situation of IntelligentPad.

These steps will take resources and attention.

WHAT IS MISSING

A number of key things are missing in the present situation of IntelligentPad--

EXPLANATION AND DOCUMENTATION

I have not yet seen any documentation except of a very obscure sort. I have seen no good writeup for beginners; I have seen no good writeup for experienced computer people, except the ~~guideline~~ ^{over view} to C++ classes, which tells almost nothing about IntelligentPad or its use. *(C++ it is important and necessary)*

BASIC APPLICATIONS ("frameworks")

As far as I know, there presently exists no set of programs made with IntelligentPad that an ordinary ~~user~~ ^{person} can use for any practical purpose whatever.

MARKETING

I know of no broad-based analysis of the marketing problems of IntelligentPad.

DISTRIBUTION CHANNELS (Marketing Infrastructure)

~~While~~ ^{in ex. D. concept} steps are being taken to put in place ~~a particular~~ ^{of power} method of component marketing, there is as yet no plan for developing organizational channels and contacts with people in existing industries who will use these channels, and there has not as yet been an effort to define who IntelligentPad could use other channels which already exist. *No special unusual*

I will discuss each of these in turn.

1. EXPLANATION & DOCUMENTATION

I have not yet seen any documentation that will give an ordinary computer person an understanding of IntelligentPad. (Such documentation is rumored to ~~exist~~ ^{be in development}, and I hope this is the case.)

It is vital to get the system explained, and explained, and

explained. But the documentation should not merely come from the developers of the project. It is very important to have books written by third parties.

The more documentation from other publishers, the better for the product; that is how the market works today. There is an enormous number of books available about popular software packages, such as WordPerfect, HyperCard or Unix (dozens or even hundreds of different titles).

(Note that *Internet for Dummies*, by my friend John Levine, has sold about 150,000 copies in the last year, but *Unix for Dummies*, by John and his sister, sold less than 50,000.)

There is an immediate need for an official introduction, as well as the more advanced documentation underway.

But articles and books on all of the following will be needed.

IntelligentPad for Beginners

IntelligentPad for Basic Programmers

IntelligentPad for Database Clients

IntelligentPad on the Internet

IntelligentPad for Personal Use

Programming Primitive Pads in C++

Programming IntelligentPad Modifiers

These are just the beginning. So the problem is how to get other authors and publishers working on the matter.

I think we can say there are “enough” books written about IntelligentPad when there is a book about it in the IPC *Dummies* series, i.e., *IntelligentPad for Dummies*. There are dozens of books in the Dummies series, about every kind of popular software (for example, *Microsoft Word for Dummies*, *Unix for Dummies*). Therefore the existence of a “Dummies” book means that a software package has become widely accepted and is considered stable and legitimate.

READER
APP BASE
RANGE OF
COMBINABLE
ACTIVITIES

USABLE FRAMEWORKS

Definition of User Domains and Message Sets

There do not exist any complete, usable IntelligentPad environments for beginners or non-programmers.

to believe It is vital to develop some kind of a beginner's world *2) kind* so that *1)* someone can start using IntelligentPad for *some* everyday activity.

User Domains

What are main definitions of user domain?

FURTHER CONVENTIONS

MARKETING

Even if some versions of IntelligentPad are free, they still must be marketed. (Marketing applies to products at all price levels, even Zero.)

Marketing will mean:
the definition of markets
the targeting of *products* for specific markets
the design of rollout and campaigns
the development of distribution channels.

Possible Markets

Market choices of direction and how There are many possible markets. *And to consider* They should all be considered before a decision is made on where to put the most effort.

SCHOOLS: University and Graduate Schools

IntelligentPad was created at a university, and as an unusual software construction set it has special appeal to students-- especially if they can use it for thesis, project or research work.

Defining frameworks

University students and professors could also have practical frameworks produced for their lives.

SCHOOLS: (University Administration)

PRIMARY AND SECONDARY
Administrators
Teachers
Pupils

Student Registration and record-keeping

SCHOOLS (Primary Administration)

Scheduling

Lesson Plans

Student Registration and record-keeping

SCHOOLS (Primary Teachers)

Primary-school teachers could have special frameworks.

SCHOOLS (Primary Students)

Primary-school pupils could use it for programming simple applications, the way Logo was used at MIT.

SCHOOLS (Secondary Teachers)

Secondary-school teachers could have special frameworks.

SCHOOLS (Secondary Pupils)

Secondary-school pupils could use it for programming simple applications, the way Logo was used at MIT.

SCHOOLS (Secondary Administration)

Scheduling

Lesson Plans

Student Registration and record-keeping

FAMILIES

Scheduling

Medical records

Records of possessions

Address lists

Video

Pre-Teens

Scheduling

Games

TEEN-AGERS

Games

Practical: dating, phones, sports

MANGA

MUSIC

GAME DESIGN

Aupro
Video

MSC. ADULTS

HM, MM BUILDING — IT'S WHAT ALL WANT TO DO

WHAT
INSIDE
WANT TO DO

CD-ROM
BUILDER

Market Infrastructure

COMPUTER STORES.

THE IDEAL CHANNEL

It is part of the idea of IntelligentPad that it will be used for development and sale by independent programmers everywhere. This is quite possible. Every tool is used by independent programmers for development and sale, and IntelligentPad should also.

However, we should not neglect conventional channels which are already available.

2 DEVELOPERS AND SYSTEMS INTEGRATORS

If IntelligentPad is to become a serious contender in the software market, it needs to have an active community of developers, who have an active channel of communication to IntelligentPad sources.

1 PROGRAMMERS AND CONSULTANTS

PROGRAMMERS AND consultants are among the most vital possible participants in IntelligentPad.

MARKETERS AND REMARKETERS; BUNDLERS

"Marketers" will be those firms who are marketing products based on Intelligent-Pad. Remarketers will be taking those products and selling them to end users, or repackaging them for other target customers.

Some marketers may just sell "IntelligentPad machines" (just as Fintronics USA sells PC clones set up to run Linux). In that case they would be telling customers that IntelligentPad was inside.

BUNDLERS

"Bundlers" will be those businesses which take IntelligentPad and put it inside a machine, or a product. They might not advertise that IntelligentPad is in use, just as software developers do not ordinarily tell people what language their programs are based on.

SERVICE BUREAUS

Service bureaus, or companies which perform services using software of their own choice or creation, should be an important outlet for IntelligentPad applications.

Market Preparation

Steps must be taken to prepare markets for a product. These have to do with making the public aware-- public relations and magazine placement; with involving opinion leaders-- key user placement; with defining the market and fine-tuning the product (often done with focus groups).

This is the sort of thing that Dentsu ^{charges} ~~would charge~~ a million dollars for, and rightly so.

Market Seeding (Business)

How will business

Database

Form-based process flow

xxx

included
be ready?
pr. c. p. x / ~~market~~
appeals, y

Market Seeding (Non-Business)

A key aspect of getting people to use something is seeding the market. Unix was seeded into universities; Macintoshes were seeded into universities and the graphic arts community.

THE CHOICES AHEAD = Key Issues

I do not believe that IntelligentPad will sell itself, or have any substantial impact without proper marketing and demo apps.

There have to be choices and they have to be funded.

Market Selection

There *must be choices*.

Demo Apps

Something has to be built.

Like the original MacPaint and MacWrite.

KEY DEMO APPS & FRAMEWORKS

Business?

School?

Personal?

Internet?

Market Preparation

There has to be Market Preparation: *seedy, publicity.*

Channel Preparation

There *must be active solicitation of channels.*

Rollout

There has to be a Rollout, and it mustn't be botched.

Follow-On

There need to be continuing programs--

DEVELOPER PROGRAM

USER HOT LINE

USER GROUPS

Summary and Conclusion

Like many others, I want to see Professor Tanaka achieve his dream. I believe it will take considerable resources and planning. These notes are intended to share my thoughts on the matter.

~~But~~ ~~I have listed some of the issues we need to~~ Whatever the resources, they can only begin to cover a small part of the possibilities of IntelligentPad. But I believe a selection should be made and a concerted plan put together.

My
will
take
resources.

IntelligentPad Strategic Issues

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We need to understand the opportunities, possibilities and pressures of the present situation.

IntelligentPad represents a wonderful vision, as outlined by Profesor Tanaka in various writings and his videotape. This is the dream of "meme media," a system of what he calls "media-based" software construction that can become a world-wide system of commerce, with pads whose parts can taken apart, and re-used in whole or part, and sold in whole or part by anyone, creating a vast system of commerce.

Everyone involved with IntelligentPad admires this dream and wants to help bring it about. However, concrete actions must be taken to bring IntelligentPad out into the world, and the details and suitability of these actions will determine its success.

This paper lists some matters to consider.

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Ted Nelson, Research Fellow, Sapporo Hypercentab

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IntelligentPad has unique powers and remarkable characteristics.

It also has certain tactical disadvantages and difficulties, and it is in a difficult competitive position.

WHAT IS IT EXACTLY?

The strategic situation depends on what you think IntelligentPad actually IS. IntelligentPad is unique; but it resembles various other products in various ways.

WIDGET-BASED SYSTEMS AND SOFTWARE CONSTRUCTION SETS

NextStep, and other visual construction systems, permit easy prototyping by the combination of screen pieces, or "widgets." This is what IntelligentPad may look like to a lot of people.

As a construction set, IntelligentPad seems to consist of--

INPUT DATA AND WIDGETS

OUTPUT DISPLAYS AND WIDGETS;

A PIPING METHOD.

Unfortunately, most such systems have failed on the market. An exception seems to be NextStep, which has a high-end niche market.

INTELLIGENTPAD AS A SIMPLE LANGUAGE

IntelligentPad gives the impression of being an easy computer language, but it has not yet been developed in that direction. There is plenty of competition there.

Visual Basic is the front-running easy language (note that it has nothing to do with the original "Basic" language). Other important easy computer languages are NextStep, HyperCard and SuperCard. Yet another system, which may become very important, is "GainMomentum" from Sybase.

INTELLIGENTPAD AS A BACKBONE FOR SIMPLE PERSONAL SYSTEMS

IntelligentPad gives that impression but not yet developed.

INTELLIGENTPAD AS A FRAMEWORK FOR INDUSTRIAL SYSTEMS

We believe that IntelligentPad can be an excellent framework for Script-based or document-based factory flow models.

This application has been quite well developed in at least one case.

GREATEST STRENGTH:

INTELLIGENTPAD AS A FRAMEWORK FOR DISTRIBUTED SYSTEMS

This where IntelligentPad shines.

IntelligentPad is already able to support distributed applications across the Internet, whether in one office or locations thousands of miles apart.

The system can support multiple stations with coordinated graphical activities, and the network transmission of both data and pads between distributed portions of applications.

POSSIBLE GIVEAWAYS ON THE WEB

We have been putting resources into a Mosaic-like browser, but it is highly unlikely that an IP-based browser will replace Mosaic or Netscape. Imitating them means being secondary; offering different features may mean an achievable niche market.

A number of possibilities come to mind. Two are:

A "Web Companion" program that will save URLs and your comments on them, even file Web pages, and convert the pictures where desired.

A simple graphical exchange system, separate from e-mail, that would handle simple animations.

GREAT COMPETITION

There is great competition throughout the software field. Even if a product is free, or the best, it must still compete.

1. Competition against IntelligentPad in the Software Market

The problems of the software market are becoming known and understood, at least the way the market works now. Many of us would like it to work differently, but that is a separate issue.

Market share, and brand name recognition, are fiercely captured and defended.

Tens of thousands of software developers give out their works through Shareware because they have no other way.

Competing with IntelligentPad are expensively-developed and expensively-marketed--

Computer Languages Languages, Construction Sets

Database Products

Personal Applications

In order to compete against these, an explicit strategy must be chosen and carried out.

2. Competition against IntelligentPad on the Internet

Everything is still free on the Internet. That does not mean it isn't competitive: it's competitive in a very unusual way, presently the competition is still to *give things away*.

Macro Med
Direct

Current Position: LIKE UNIX IN 1970, LIKE THE MACINTOSH IN 1984

IntelligentPad is the kernel, the starting point, of a potential new industry and system of software.

However, this has a number of historical precedents. I think it is most like Unix in 1970 and the Macintosh in 1984-- it is the beginning, but only the beginning, of what could be an extensive movement.

The success of Unix was based on its acceptance by many thousands of university students and faculty. This happened over a considerable period of time, and happened because Unix was offered free to educational institutions.

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In the same way, we must consider appropriate steps to advance the strategic and competitive situation of IntelligentPad.

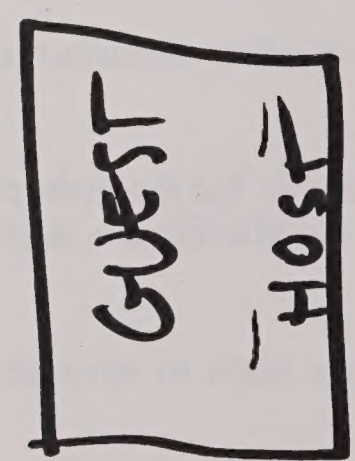
These steps will take resources and attention.

FINAL.

General IP

STANDARD SET SEQUENCE,
and how UPDATE is
triggered.
(not absolutely standard)

set



invokes

"set" method (in slot)

CAN HAVE ARGS (list) Params

possible but not usual

changed" method (param)
UNIQUE (param) name

OPTIONAL (self changed)

(all the) children update
(some)

to SELECTION
OF
GUEST
PADS

Special case,
not usual

RESPONSE
TO UPDATE:
Update Method.

MAY ISSUE
GIMME.
(default)

returned
as return value
return value
by Update
Method.

GIMME
VALUE
(ANY ARG)

GIMME
METHOD:

DEFAULT
(data slot only)
RETURNS
value of
"data register"
(can be anything)

Product version:
strongly typed,
input type = output type

Reference version
weakly typed
(input ≠ output)

OTHER WISE:
Particular GIMME
method

IntelligentPad: An Introduction and Quick Reference

Ted Nelson, Research Fellow, Sapporo HyperLab

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PROFESSOR TANAKA'S DESIGN

1. THE GOAL OF SIMPLICITY
2. DEMOS
3. The Ideas of IntelligentPad
4. Secrets of the Padmasters

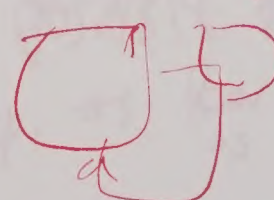
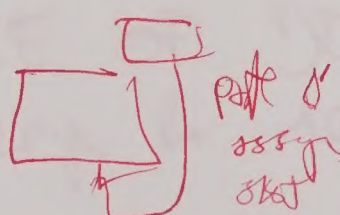
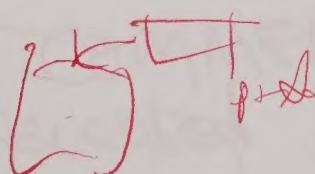
Overview p/c
EASY

HARVEST

PERSONAL p/c mothers

HARVEST

design sks



1P
HOST ~~ADD~~ = BASE ~~ADD~~

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1P intro
transposable
transposable
mixable
re-editable
programmable media

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1P intro
COPYING
AND PASTING

Composition

SLOTS

Hint
~~Hint~~ short messages

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1P intro
For anyone
considering use of 1P

DESIGNER
FARMHOUSE DESIGN

APR 8 1995

PROF. DAVAR'S DESIGN

CURRENT VERSIONS

Widget-based Desktop for all purp
~~Complex~~ complex difficulties of exploration - and beyond

Desktop Log 1.0k
 V.2. BASIC
 ASSEMBLY & PROGRAMS
 so together, it's a step

THE GOAL OF SIMPLICITY

IntelligentPad was created with simplicity in mind

There are many things people want to do with computers

Most of them are too hard

IntelligentPad offers the possibility of real simplification of computer use in many domains of life.

Unified intercommunication among many Apps AND THE NET

APPLICATIONS ACROSS INTERNET and the Web

Today, the Internet has created an astonishing new channel of communication for the whole world

In turn, World Wide Web has created an extremely simple way to navigate the Internet

Running coordinated information applications across that network, however, is another thing entirely.

IntelligentPad is perhaps the simplest way to run applications across the Internet.

also for small (all stuff) - recall from

ONE SIMPLE IDEA

TOTAL GENERALITY

All the rest is about the ADDITIONAL DETAILING OF THE SIMPLE IDEA.

NET COMMERCE OF DECON POSSIBLE PADs
 Generalized design for to camp, as far as possible

DEMOS

ALPHA CHANNEL

WEB DEMO OF INTELLIGENTPAD

1. SIMPLE CONNECTIONS
2. HOT-SLOT CONNECTIONS
3. SLOT-SELECT CONNECTIONS

4. INSIDER LEVELS

D

INTELLIGENTPAD WEB DEMO OF

1. SIMPLE CONNECTIONS
2. HOT-SLOT CONNECTIONS
3. SLOT-SELECT CONNECTIONS

4. INSIDER LEVELS

The Ideas of IntelligentPad

Level 1:

THE PASTING METAPHOR

The basic idea of IntelligentPad, from which it has been designed, is the idea of pasting.

WHAT A PAD IS

A Pad is like a piece of paper-- two-dimensional, often rectangular, and movable across other pieces of paper.

A source of copies

Every copy of a Pad is also a Pad

Every Pad has size, shape, position

One pad can be pasted on top of another.

Every pad has a Relative Height

Actually-- Peel, Paste and Move

However, like a real pad of paper, you may think of a Pad as a stack from which identical sheets can be peeled off.

The Ideas of IntelligentPad

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Actually--Real Pads and Moves

However, like a real pad of paper, you may think of a Pad as a stack from which identical sheets can be peeled off.

Information from the back

Information that Automatically comes from the back
--What a pad finds out without a Slot Connection--
Some info arrives with no special arrangement
Other information is set up by special arrangement
slot connections
specially-designed protocols

Pads on Top of Pads on Top of Pads

Pasting
Overlapping
Straddling

→ *REQUIRES APPROPRIATE BASE PAD*

The Mountain Model

The stack of pads is ordinarily thought of as getting narrower as it gets taller.

What is Actually Allowed

Pads are allowed to overlap, straddle

Where You Paste: (upper left corner/cursor)

The position in which one pad is pasted on another is exactly defined as being based on either:

the position of the upper-left-hand-corner of the pad

OR

the position of the cursor when the pad is pasted.

(Hit/xy)

(red)

Composite Pads

New pads may be created, with new functions, by combining others through--

pasting one pad on top of one another
connecting their functions in various ways
(some implicit, some explicit)

By working out a system of intercommunication among them

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connecting their functions in various ways
(some implicit, some explicit)

By working out a system of intercommunication among them

The resulting pad we call a Composite Pad
A copy of a composite pad now has all of its functions.
(Can a copy of a composite pad be taken apart?)

The Zoo of Pads

Special pads for special kinds of applications

UTILITY PADS FOR ALL PURPOSES

BUT

there is a level of shared generality--

Desktop Pad
Site Pad (not a type)
Field Pad FOR EVENT SPANNING (2 main uses: ^{usually} BE SHARED; OR STORES EVENT LOGS)
Shared Copy FOR STATE SPANNING change in indiv instances does not propagate back to the master
REMOTE SHARED COPY is a principal way in which workstations may be tied together (cross network)
Stage Pad ^{used for events} _{series}
PROXY PAD
extending object or proxy
WORKING ON TOP

FRAMEWORKS: Pad Worlds & Domains

Area WHERE YOU CAN PASTE

Defining lower and upper cells

Defining the usefulness of the paste operation

USER SELECTION AND COMPOSING

few issues
What are you expecting to do
How will it be done
& pad to pad

Stage Pad

has a SCRIPT (no diff for ref version & ~~initial~~ Small text very
replaces KB & mouse - now product version)

~~for script~~

pseudo-keyboard input

for EXPECTED SEQUENCES OF USER OPERATIONS
EVENT-DRIVEN, detects user error
BRANCHING in program
Cond. def. - def. pad ON event DO act
OPERATION POINTS default a pad
CAN OVERWRITE NEW PADS.

TUB

bs9 99612

FR
p 99

Area WHERE YOU CAN PASTE

SL CO

Lower pad is called a Host, upper pad a Guest

✓ any ~ Yt

PADS ARE CONNECTED IN TWO WAYS--

Simple "pasting," that is, placement of one on another
SLOT CONNECTION, where a pad's single downward
connector is connected to one of the slots in a pad below it.

FUN example

SLOT CONNECTIONS

The more complex connections among pads are handled by
Slots.

Slots pass information back and forth between the pad levels.
Specific commands are made available for this.

Any form of information may go from pad to pad between
slots-- arguments, text, graphics, video, and pads themselves.

What a Pad Knows Without a Slot Connection

SIMPLE PASTING SOMETIMES WORKS

A number of basic types of information are automatically
passed between host and guest pads--

size

position

Any pad pasted on any other pad can receive these specifics.
& messages: move, resize (GO BOTH WAYS)

Other forms of information are specific to the individual pad
types and their slots.

PREWARMED/ PREMOISTENED PADS

(It is also possible to prepare specific pads to be pasted on other
specific pads without slot connections. This requires certain
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While the intention of IntelligentPad is to bring great computer power to the people of the world, creating applications within this framework involves a variety of technicalities.

Those who enter these realms are the Pad Masters ...

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The design of a framework involves deciding what the pads are and what their communications are among them.

Message Definition

Specifics of System messages

Set

Update

Gimme

BASIC MODEL (w slider, etc)

The usual example:

Map

Slider

SECRETS OF THE PAD MASTERS

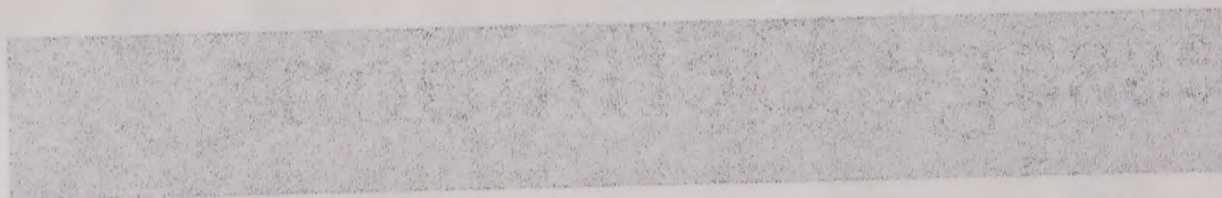
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There are some things that you don't have to understand unless you REALLY GET INTO the interior of the system...

THE VIEW MODEL

TRADITIONAL OBJECT-
ORIENTED PROGRAMMING
AND INTELLIGENTPAD

2. DEMOS

3. The Ideas of IntelligentPad

4. Secrets of the Padmasters

[REDACTED]

S
P

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[REDACTED]

T

AND INTELLIGENTPAD
ORIENTED PROGRAMMING

Gone copy
to Cheryl

IntelligentPad: An Introduction and Quick Reference

Ted Nelson, Research Fellow, Sapporo HyperLab

Contents

~~PROFESSOR TANAKA'S DESIGN~~

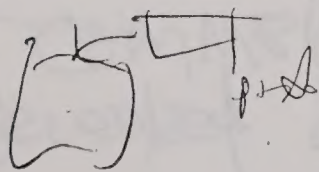
1. THE GOAL OF SIMPLICITY

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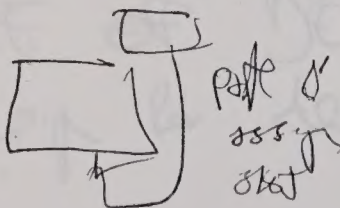
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Overview p/c
EASY

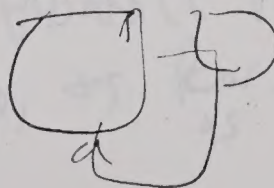


HARDER



HARDEST
put mothers

HARDEST



design sks

REF. WORK'S DONE

CURRENT VERSIONS

Widget-based Toolkit for all purposes
~~Complex~~ complex activities of exploration - and beyond

Toolkit logs 1.0k
 V.2. Basic
 ASSEMBLY + FRAMEWORKS
 so together, it's a step

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ONE SIMPLE IDEA

TOTAL GENERALITY

All the rest is about the ADDITIONAL DETAILING OF THE SIMPLE IDEA.

NET COMMERCE OF DECOR POSITIVE PADs
 Generated design for to camp, as far specifics as possible

DEMOS

ALICE AT CHAINMAIL

WEB DEMO OF INTELLIGENTPAD

1. SIMPLE CONNECTIONS
2. HOT-SLOT CONNECTIONS
3. SLOT-SELECT CONNECTIONS

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Overlapping

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OR

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(Hit/Fly)

(Net)

Composite Pads

New pads may be created, with new functions, by combining others through--

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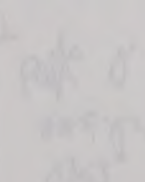
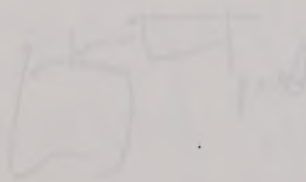
easy

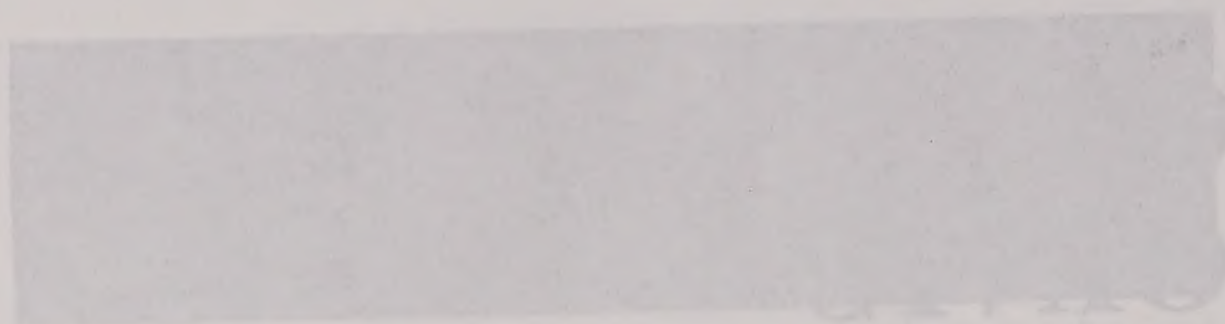
MANUAL

HyperLab

HyperLab

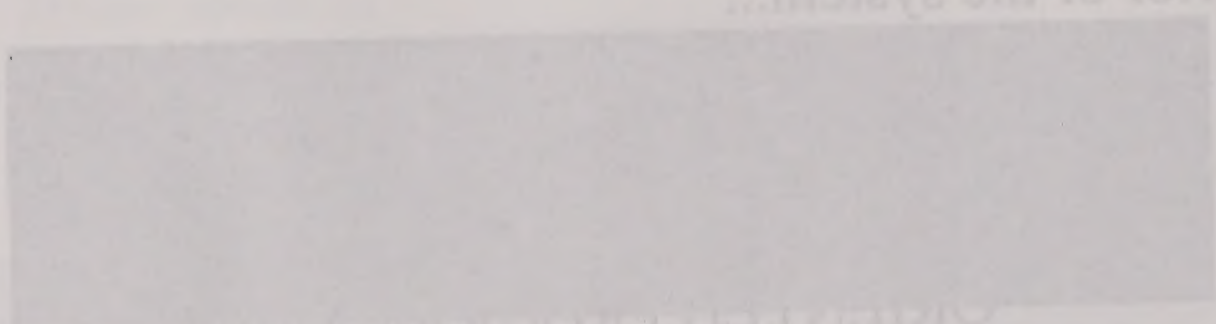
John S. H.





SP

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ORIENTED PROGRAMMING
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4.1

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lab

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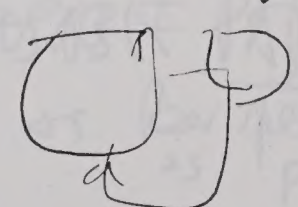
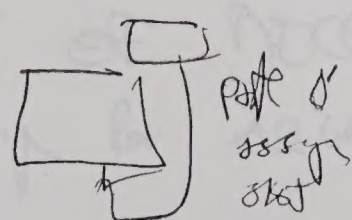
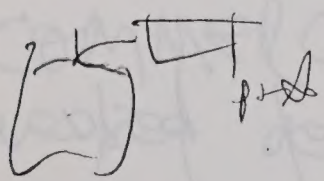
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ALBERT H. CHAZAN

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Dobbs reflect

APR 24 1995

Models & probs
G. students (practical)
Schools (practical)

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^{oo} PROFS HAVE FAVORITE
^{oo} CGS

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"Killer AP" —
Internet Works

APR 24 1995

POSTSCRIPT

APR 24 1995

5 Adobe lounge

APR 24 1995

EXEMPLARY APPS

APR 24 1995

an unusual
software construct. ~ sct

APR 24 1995

re Adobe Ap

~~APR 19 1995~~

APR 24 1995

IPSILOT

RAD PITCH

Extremely hard to establish

new language
APR 2 4 1995 APR 2 4 1995

APR 2 5 1995

THD ↑
Spam ↑ (Fred - yard)

Not just a ~~widget~~ introduction
to it
Not just a widget set
BUT THOSE THINGS
CAN'T HURT IT

APR 2 5 1995

Infrastructure:

Businesses

Knowledge Out There

3d-party books

POCKET OUT
SOME
KEY OBJECTS
OF SOFTWARE
AND MICRO
PROCESSOR
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Shoreware channel
re US Shoreware
market (800)

APR 2 5 1995

FREE
A CD-ROM Distribution

APR 2 5 1995

Not
who says
do
But they must
be done.

So many things are undecided as to the future uses of IntelligentPad major uses of every kind and how they will tie together.

While we are all deeply impressed by Professor Tanaka's vision making these aspects more specific will be a vital part of what happens.

- it has to be some application area people can use

UNDERSTANDING INTELLIGENTPAD

It is still hard to explain IntelligentPad. This is because there is nothing like it in depth. It is all too easy to compare it superficially with-

WWW browser + cl

As a Construction Set - Σ IP

INPUT ~~AND OUTPUT~~
DATA AND WIDGETS

OUTPUT DISPLAYS
AND WIDGETS
PIPING METHOD

APR 25 1995

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AN ENTIRE WORLD

SIMPLE FOR BEGINNERS

DEEP FOR PROFESSIONALS

**VERY DIFFERENT FROM MOST
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THE BASIC STRUCTURE

A metaphor: 2D "Pad" (term chosen
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A virtuality: conceptual structure & feel
also what's easy

Introduction Overview and Intelligent Pad:

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HOW IT STARTED; WHAT'S EASY

Stackable widgets

**BASIC IDEA: MOVE PIECES
ONTO PIECES**

it got slightly more complicated

Level 1: THE WORLD OF STACKABLE PADS

WHAT'S ESPECIALLY EASY

visualizations that don't change size

user moves things explicitly

interchangeable parts

modules at corresponding level

properties acquired "from behind"

EXAMPLE: Algebra

each side of the equation is equal to
a **NUMBER**

Level 2: THE SLOT

anything can go into, come out of a slot

COMPLETE UNITS, not just raw
data--

text

picture

music

etc.

Appendix: FOR PROFESSIONALS --

I.PAD & OBJECT-ORIENTED PROGRAMMING

"Save Format"

ASCII format

Binary format

Level 3: THE MODIFIER

etc.

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HOd-----

ENDLINE

STAY OFF HERE

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ENDLINE

STAY OFF HERE

UNDERSTANDING INTELLIGENTPAD

It is still hard to explain IntelligentPad. This is because there is nothing else like it in depth. It is all too easy to compare it to ordinary notes.

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While we are all deeply impressed by Professor Tanaka's vision, making these aspects more specific will be a vital part of what happens.

KILLER APS

A Browser Widget

A MUCH
HIGHER
CUT-THROAT
FOR THE LAUNCH
R
DRE
AM

Its
competitiv
e position
is poor and
getting
worse.

1. Xmas-to News:
NEW DEFINITION OF TRANSCCLUSION (tentative).

2. INTELLIGENTPAD ISSUES.

What's needed
to move it forward.

3. The problem of UNDERSTANDING
the MVC STRUCTURE of IntelligentPad.

12. IntelligentPad's 'SAVE FORMAT' —

13. Better name? WHAT IT IS.

16. SGML-like SAVE FORMAT —

17. And its problems for Xmas-to.

44, TN.

As a Construction Set - Σ IP

INPUT ~~AND OUTPUT~~
DATA AND WIDGETS,

OUTPUT DISPLAYS

AND WIDGETS
PIPING METHOD

APR 25 1995

IntelligentPad Strategic Issues

Ted Nelson, Research Fellow, Sapporo HyperLab

OBJECTIVES OF THIS PAPER

How can IntelligentPad best become a powerful, effective and widespread tool in tomorrow's computer world?

We need to understand the opportunities, possibilities and pressures of the present situation.

IntelligentPad represents a wonderful vision, as outlined by Profesor Tanaka in various writings and his videotape. This is the dream of "meme media," a system of what he calls "media-based" software construction that can become a world-wide system of commerce, with pads whose parts can be sold, taken apart, and re-used in whole or part.

Everyone involved with IntelligentPad admires this dream and wants to help bring it about. However, concrete actions must be taken to bring IntelligentPad out into the world, and the details and suitability of these actions will determine its success.

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THE CURRENT SITUATION AND PROBLEMS OF INTELLIGENTPAD

What it is

Competition

Situation now: like Unix in 1970, Macintosh in 1984

WHAT IS NEEDED

Explanation and Documentation

Basic Applications

Marketing

Distribution Channels; Market Preparation

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THE CURRENT SITUATION AND PROBLEMS OF INTELLIGENTPAD

IntelligentPad has unique powers and remarkable characteristics.

It also has several tactical disadvantages and difficulties, and it is in a difficult competitive position.

The Competitive Situation

Depends on what you think IntelligentPad IS

Competition with IntelligentPad in the Software Market

The problems of the software market are becoming known and understood, at least the way the market works now. Many of us would like it to work differently, but that is a separate issue.

Tens of thousands of software developers give out their works through Shareware because they have no other way

Competitive Languages

Competitive Database Products

Competitive Personal Applications

Competition with IntelligentPad on the Internet

Everything is still free on the internet. That does not mean it isn't competitive: it's competitive in a very unusual way, competition to give things away.

Freebie software frobs

WHAT IS IT EXACTLY?

The competitive situation depends on what you think IntelligentPad actually IS.

The strategic situation depends on what you think IntelligentPad actually IS.

IntelligentPad is superficially similar to certain products on the market--

WIDGET-BASED SYSTEMS

NextStep, and other visual construction systems, permit easy prototyping by the combination of screen pieces, or "widgets." This is what IntelligentPad may look like to a lot of people.

CONTEMPORARY EASY LANGUAGES

Visual Basic is the front-running easy language (note that it has nothing to do with the original "Basic" language). Other important easy computer languages are NextStep, HyperCard and SuperCard. Yet another system, which may become very important, is "GainMomentum" from Sybase.

INTELLIGENTPAD AS A BACKBONE FOR SIMPLE PERSONAL SYSTEMS

Gives that impression but not yet developed

INTELLIGENTPAD AS A FRAMEWORK FOR INDUSTRIAL SYSTEMS

Script-based or document-based factory flow models

INTELLIGENTPAD AS A FRAMEWORK FOR DISTRIBUTED SYSTEMS

***This where it shines.

Current Position:
LIKE UNIX IN 1970,
LIKE THE MACINTOSH IN 1984

IntelligentPad is the kernel, the starting point, of a potential new

industry and system of software.

However, this has a number of historical precedents. I think it is most like Unix in 1970 and the Macintosh in 1984-- the first part, but only the first part, of what could be an extensive movement.

The success of Unix was based on its acceptance by many thousands of university students and faculty. This happened over a considerable period of time, and happened because Unix was offered free to educational institutions.

The success of the Macintosh was much less certain, and there have been several critical periods where it could have died: right after launch, in 1984; 1987-1988; and about 1992. It was saved by precise tactical actions--

1984: the inclusion of two basic programs, MacPaint and MacWrite, in the original Macintosh package. These allowed beginners to do word processing and very unusual graphic art projects, and were a sign to users and developers of the machine's potential.

Furthermore, Apple's "Evangelist" and developer programs encouraged a number of firms to enter the Macintosh software market.

1987-8: the appearance of HyperCard and Adobe PhotoShop. These defined a new genre (hypermedia) and a new industry (graphic arts image processing and prepress), locking in two new niche markets.

1992: Apple decides to open the system to other manufacturers, assuring a survivable market.

This is my personal analysis, and may not be correct, but the main point is that specific steps were taken carefully to deal with the Macintosh's strategic and competitive situation.

In the same way, we must consider appropriate steps to advance the strategic and competitive situation of IntelligentPad.

These steps will take resources and attention.

WHAT IS MISSING

A number of key things are missing in the present situation of IntelligentPad--

EXPLANATION AND DOCUMENTATION

I have not yet seen any documentation except of a very obscure sort. I have seen no good writeup for beginners; I have seen no good writeup for experienced computer people, except the guideline to C++ classes, which tells almost nothing about IntelligentPad or its use.

BASIC APPLICATIONS ("frameworks")

As far as I know, there presently exists no set of programs made with IntelligentPad that an ordinary user can use for any practical purpose whatever.

MARKETING

I know of no broad-based analysis of the marketing problems of IntelligentPad.

DISTRIBUTION CHANNELS (Marketing Infrastructure)

While steps are being taken to put in place a particular method of component marketing, there is as yet no plan for developing organizational channels and contacts with people in existing industries who will use these channels, and there has not as yet been an effort to define who IntelligentPad could use other channels which already exist.

I will discuss each of these in turn.

EXPLANATION & DOCUMENTATION

I have not yet seen any documentation that will give an ordinary computer person an understanding of IntelligentPad. (Such documentation is rumored to exist, and I hope this is the case.)

It is vital to get the system explained, and explained, and

explained. But the documentation should not merely come from the developers of the project. It is very important to have books written by third parties.

The more documentation from other publishers, the better for the product; that is how the market works today. There is an enormous number of books available about popular software packages, such as WordPerfect, HyperCard or Unix (dozens or even hundreds of different titles).

(Note that *Internet for Dummies*, by my friend John Levine, has sold about 150,000 copies in the last year, but *Unix for Dummies*, by John and his sister, sold less than 50,000.)

There is an immediate need for an official introduction, as well as the more advanced documentation underway.

But articles and books on all of the following will be needed.

IntelligentPad for Beginners

IntelligentPad for Basic Programmers

IntelligentPad for Database Clients

IntelligentPad on the Internet

IntelligentPad for Personal Use

Programming Primitive Pads in C++

Programming IntelligentPad Modifiers

These are just the beginning. So the problem is how to get other authors and publishers working on the matter.

I think we can say there are “enough” books written about IntelligentPad when there is a book about it in the IPC *Dummies* series, i.e., *IntelligentPad for Dummies*. There are dozens of books in the Dummies series, about every kind of popular software (for example, *Microsoft Word for Dummies*, *Unix for Dummies*). Therefore the existence of a “Dummies” book means that a software package has become widely accepted and is considered stable and legitimate.

USABLE FRAMEWORKS

Definition of User Domains and Message Sets

There do not exist any complete, usable IntelligentPad environments for beginners or non-programmers.

It is vital to develop some kind of a beginner's world so that *someone* can start using IntelligentPad for *some* everyday activity.

User Domains

What are main definitions of user domain?

FURTHER CONVENTIONS

MARKETING

Even if some versions of IntelligentPad are free, they still must be marketed. (Marketing applies to products at all price levels, even Zero.)

Marketing will mean
the definition of markets
the targeting of products for specific markets
the design of rollout and campaigns

Possible Markets

There are many possible markets. They should all be considered before a decision is made on where to put the most effort.

SCHOOLS (University and Graduate School)

IntelligentPad was created at a university, and as an unusual software construction set it has special appeal to students-- especially if they can use it for thesis, project or research work.

Defining frameworks

University students and professors could also have practical frameworks produced for their lives.

SCHOOLS (University Administration)

Student Registration and record-keeping

SCHOOLS (Primary Administration)

Scheduling

Lesson Plans

Student Registration and record-keeping

SCHOOLS (Primary Teachers)

Primary-school teachers could have special frameworks.

SCHOOLS (Primary Students)

Primary-school pupils could use it for programming simple applications, the way Logo was used at MIT.

SCHOOLS (Secondary Teachers)

Secondary-school teachers could have special frameworks.

SCHOOLS (Secondary Pupils)

Secondary-school pupils could use it for programming simple applications, the way Logo was used at MIT.

SCHOOLS (Secondary Administration)

Scheduling

Lesson Plans

Student Registration and record-keeping

FAMILIES

Scheduling

Medical records

Records of possessions

Address lists

Pre-Teens

Scheduling

TEEN-AGERS

Games

Practical: dating, phones, sports

MANGA

MUSIC

GAME DESIGN

Market Preparation

Market Infrastructure

THE IDEAL CHANNEL

It is part of the idea of IntelligentPad that it will be used for development and sale by independent programmers everywhere. This is quite possible. Every tool is used by independent programmers for development and sale, and IntelligentPad should also.

However, we should not neglect conventional channels which are already available.

DEVELOPERS AND SYSTEMS INTEGRATORS

If IntelligentPad is to become a serious contender in the software market, it needs to have an active community of developers, who have an active channel of communication to IntelligentPad sources.

PROGRAMMERS AND CONSULTANTS

PROGRAMMERS AND consultants are among the most vital possible participants in IntelligentPad.

MARKETERS AND REMARKETERS

“Marketers” will be those firms who are marketing products based on Intelligent-Pad. Remarketers will be taking those products and selling them to end users, or repackaging them for other target customers.

Some marketers may just sell “ IntelligentPad machines” (just as Fintronics USA sells PC clones set up to run Linux). In that case they would be telling customers that IntelligentPad was inside.

BUNDLERS

“Bundlers” will be those businesses which take IntelligentPad and put it inside a machine, or a product. They might not advertise that IntelligentPad is in use, just as software developers do not ordinarily tell people what language their programs are based on.

SERVICE BUREAUS

Service bureaus, or companies which perform services using software of their own choice or creation, should be an important outlet for IntelligentPad applications.

Market Preparation

Steps must be taken to prepare markets for a product. These have to do with making the public aware-- public relations and magazine placement; with involving opinion leaders-- key user placement; with defining the market and fine-tuning the product (often done with focus groups).

This is the sort of thing that Dentsu would charge a million dollars for, and rightly so.

Market Seeding (Business)

Database

Form-based process flow

xxx

Market Seeding (Non-Business)

A key aspect of getting people to use something is seeding the market. Unix was seeded into universities; Macintoshes were seeded into universities and the graphic arts community.

THE CHOICES AHEAD

I do not believe that IntelligentPad will sell itself, or have any substantial impact without proper marketing and demo apps.

There have to be choices and they have to be funded.

Market Selection

There

Demo Apps

Something has to be built.

Like the original MacPaint and MacWrite

KEY DEMO APPS & FRAMEWORKS

Business?

School?

Personal?

Internet?

Market Preparation

There has to be Market Prep

Channel Preparation

There

Rollout

There has to be a Rollout, and it mustn't be botched.

Follow-On

There need to be continuing programs--

DEVELOPER PROGRAM

USER HOT LINE

USER GROUPS

Summary and Conclusion

Like many others, I want to see Professor Tanaka achieve his dream. I believe it will take considerable resources and planning. These notes are intended to share my thoughts on the matter.

Whatever the resources, they can only begin to cover a small part of the possibilities of IntelligentPad. But I believe a selection should be made and a concerted plan put together.

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A Browser Widget

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A MUCH HIGHER CEREMONY FOR THE LAUNCH DATE

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APIs

and creative development of comp

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I advocate a WWW Browser and
— as possibly design —
a programmer or designer
to keep updating it.

STEPS OF THE LAUNCH

There are no detailed overall plans for a single
application — ones ...

KILLER APS?

A Browser Widget

~~Adm.~~
~~Revs~~

NO FINAL VERSION
OF SOFTWARE.

A LONG WAY
ON IT'S INTUITION

There has been no
detailed simulation
of the tool that is used

UNIX FRONTEND

APR 24 1995

Graphical rep^{res} of progs, files
whether it could work:
extⁿ is unknown
BIG PROJECT - EXTⁿ W^{as} DESIGNED
BUT I leave to progs
UNIX

Unlabeled maybe 3/4

~~Adm.~~

IP IS NOT SIMPLE

As demonstrated,
~~part~~
plus part are
I/O widgets & views.
That's easy.

BUT DESIGNING TOP WORKS
SEEMS TO ME
THE POSSIBLE
VERY DIFFICULT.

UP BEAT!

4
SUG'd
I pass on
deft ideas

J
FEAR
THIS GROUP
MAY BE
TOO
OPTIMISTIC

00

DIDN'T KNOW THESE PLOD
WONT TO HELP

IMPRESSION ~~ALL~~
in perspective
it goes

R
MY EXPERIENCE
IN SOFTWARE

HELP WITH

MARKETING & ROLLOUT

YOU ONLY GET
ONE ROLLOUT

MAXIMIZE IMPACT
Make sure it's red

Copy of EVERYONE
KOREAN
GEN. MAGIC
ORACLE
SYBOSF

IF YOU
COMPETE
WITH
EVERYTHING
PICK YOUR
TANGENTS
ONE BY ONE

FREE CD-ROM?

SHAREWARE AT EGGHEAD

XANADU APPS

IT'S PICTURE
OF COMMENCE.

MM APPS

CD-ROM builder
(Director de application)

~~MARKETING~~ D

